What is claimed is:

1. A receiver for a code division multiple access system comprising:

a pilot symbol producing section which produces pilot symbols of complex vector expression from a received radio frequency (RF) signal based on a first local frequency signal and a second local frequency signal, wherein said first local frequency signal has a frequency obtained by shifting a frequency of a carrier signal by an IF frequency and said second local frequency signal has a frequency equal to said IF frequency, and said pilot symbols have been subjected to inverse modulation to remove a modulation component;

a frequency offset estimating section which carries out in-phase adding operations to said pilot symbols of said complex vector expression over a predetermined interval in accordance with a predetermined pattern, carries out a complex adding operation of results of said in-phase adding operations, and determines a frequency offset from a result of said complex adding operation; and

a local signal generating section which generates said first and second frequency signals based on said determined frequency offset.

2. The receiver according to claim 1, wherein said

predetermined interval is an interval longer than one symbol period.

3. The receiver according to claim 1, wherein said pilot symbol producing section orthogonally demodulates said RF signal into an in-phase component and an orthogonal component, and produces a channel count data indicative of a number of effective channels from said in-phase component and said orthogonal component based on a spreading code, a symbol rate and a pilot symbol interval, and

wherein said receiver further comprises:

a control unit which generates an addition count data indicative of the number of pilot symbols to be added and an in-phase summing pattern, and

wherein said frequency off set estimating section determines said predetermined interval and said predetermined pattern based on said addition count data and said in-phase summing pattern.

4. The receiver according to claim 1, wherein said frequency off set estimating section includes:

an in-phase adding section which carries out said in-phase adding operations to said pilot symbols of said complex vector expression over said predetermined interval in accordance with said predetermined pattern;

an addition synthesizing section which carries out said complex adding operation of the results of said in-phase adding operations; and

a frequency offset estimating unit which determines said frequency offset from said result of said complex adding operation.

5. The receiver according to claim 4, wherein said in-phase adding section includes a plurality of in-phase adding units, each of which includes:

a buffer memory which stores said pilot symbols of said complex vector expression;

a control section which generates said predetermined interval and said predetermined pattern based on an addition count data indicative of a number of pilot symbols to be added and an in-phase summing pattern; and

an in-phase adder which reads out said pilot symbols of said complex vector expression from said buffer based on over said predetermined interval and said predetermined pattern, and carries out said in-phase adding operation to said read out pilot symbols of said complex vector expression.

6. The receiver according to claim 4, wherein said addition synthesizing section includes:

a complex adder which carries out said complex

adding operation of the results of said in-phase adding operations.

7. The receiver according to claim 4, wherein said frequency offset estimating unit includes:

a buffer memory which stores said result of said complex adding operation;

a conjugate complex multiplier which carries out a conjugate complex multiplication of said result of said complex adding operation stored in said buffer memory to calculate phase difference vectors;

an averaging unit which carries out an averaging operation to said phase difference vectors;

an angle converter which converts said averaged phase difference vector to an angle value; and

a converter which converts said angle value to said frequency offset based on a symbol rate.

8. A method of automatically controlling a frequency in a code division multiple access system comprising:

producing pilot symbols of complex vector expression from a received radio frequency (RF) signal based on a first local frequency signal and a second local frequency signal, wherein said first local frequency signal has a frequency obtained by shifting a frequency of a carrier signal by an IF frequency and

said second local frequency signal has a frequency equal to said IF frequency, and said pilot symbols have been subjected to inverse modulation to remove a modulation component;

determining a frequency offset from said pilot symbols of said complex vector expression through in-phase adding operations to said pilot symbols of said complex vector expression over a predetermined interval based on a predetermined pattern; and

generating said first and second frequency signals based on said determined frequency offset.

9. The method according to claim 8, wherein said predetermined interval is an interval longer than one symbol period.

10. The method according to claim 9, wherein said producing includes:

orthogonally demodulating said RF signal into an in-phase component and an orthogonal component; and

producing a channel count data indicative of a number of effective channels from said in-phase component and said orthogonal component based on a spreading code, a symbol rate and a pilot symbol interval, and

wherein said method further comprises:

generating said addition count data indicative

of a number of pilot symbols to be added and an in-phase summing pattern, and

wherein said determining a frequency offset includes:

determining said predetermined interval and said predetermined pattern based on said addition count data and said in-phase summing pattern.

11. The method according to claim 8, wherein said producing includes:

carrying out said in-phase adding operations to said pilot symbols of said complex vector expression over said predetermined interval in accordance with said predetermined pattern;

carrying out said complex adding operation of the results of said in-phase adding operations; and

determining said frequency offset from said result of said complex adding operation.

12. The method according to claim 11, wherein said carrying out said in-phase adding operations includes:

storing said pilot symbols of said complex vector expression in a buffer memory for every in-phase adding operation;

generating said predetermined interval and said predetermined pattern based on an addition count data indicative of a number of pilot symbols to be added

and an in-phase summing pattern; and

reading out said pilot symbols of said complex vector expression from said buffer based on over said predetermined interval and said predetermined pattern, to carry out said in-phase adding operation to said read out pilot symbols of said complex vector expression.

13. The method according to claim 11, wherein said carrying out said complex adding operation includes:

carrying out said complex adding operation of the results of said in-phase adding operations.

14. The method according to claim 11, wherein said determining said frequency offset includes:

storing said result of said complex adding operation in a buffer memory;

carrying out a conjugate complex multiplication of said result of said complex adding operation stored in said buffer memory to calculate phase difference vectors;

carrying out an averaging operation to said phase difference vectors;

converting said averaged phase difference vector to an angle value; and

converting said angle value to said frequency offset based on a symbol rate.

15. An automatic frequency controlling method in a code division multiple access system using a spectrum spreading technique which has a frame format in which pilot symbols and data symbols are time multiplexed for transmission and in which a variable transmission symbol rate is realized by making a spreading rate variable under a constant chip rate, comprising:

in-phase summing in at least two different in-phase summation rates the pilot symbols having a complex vector expression over a predetermined length of a symbol interval after converting the pilot symbols into the complex vector expression by canceling a data modulated component of the pilot symbols; and

estimating a frequency offset based on a result of conjugate complex multiplication of a plurality of said complex vector expressions which are subjected to the in-phase addition.

16. An automatic frequency controlling method according to claim 15, further comprising:

controlling an oscillation frequency of a crystal oscillator in accordance with an estimation of the frequency offset calculated through the estimation of the frequency offset;

converting the received frequency signal into an intermediate frequency signal in accordance with

the oscillation frequency; and

orthogonally demodulating the intermediate frequency signal based on the oscillation frequency.

17. An automatic frequency controlling method according to claim 15, further comprising:

obtaining a baseband signal having an in-phase component and an orthogonal component through the orthogonal modulation and converting into digital signals by A/D converters, respectively;

inversely spreading the digital signals by inversely spreading units to separate the pilot symbols from the data symbols; and

converting the pilot symbols into complex vector expressions by canceling the data modulated components of the pilot signals.

18. An automatic frequency controlling system in a code division multiple access system using a spectrum spreading technique which has a frame format in which pilot symbols and data symbols are time multiplexed for transmission and in which a variable transmission symbol rate is realized by making a spreading rate variable under a constant chip rate, comprising:

an orthogonal demodulator converting a received signal into a baseband signal having an in-phase component and an orthogonal component;

inversely spreading units inversely spreading the in-phase component and the orthogonal component of the baseband signal;

pilot symbol interval detectors separating the pilot symbols from the data symbols;

inverse demodulating units converting the pilot symbols into complex vector expressions by canceling data modulated components of the pilot symbols;

an in-phase summing section in-phase summing in at least two different manners, the complex vector expressions of the pilot symbols over a predetermined length of the symbol section; and

an estimating section estimating the frequency offset from conjugate complex multiplication of a plurality of said complex vector expressions which are subjected to the in-phase summation.

19. An automatic frequency controlling system according to claim 18, wherein the in-phase summing section in-phase summing in at least two different manners comprises:

a buffer memory storing the symbols over at least two symbol intervals of the complex vector signal received from the demodulator; and

an in-phase adder in-phase summing the outputs of the buffer memory, and

the estimating section estimating the frequency

offset comprises:

a complex adder summing the outputs of the in-phase adders which correspond to the in-phase components and the orthogonal components of the base band signal;

a conjugate complex multiplier storing the sum in a second buffer memory and carrying out conjugate complex multiplication to outputs of the second buffer memory; and

an angle/frequency offset converter averaging and converting outputs of the conjugate complex multiplier into angular components, and converting the angular components into frequency components to estimate a frequency offset.

20. An automatic frequency controlling system according to claim 18, further comprising:

a controlling section controlling the oscillation frequency of a crystal oscillator in accordance with an estimation of the frequency offset obtained through the estimation of the frequency offset; and

a converting section converting the received frequency signal into an intermediate frequency signal in accordance with the oscillation frequency,

wherein the intermediate frequency signal is orthogonally demodulated using the oscillation

frequency.

21. A CDMA receiver in a code division multiple access system using a spectrum spreading technique which has a frame format in which pilot symbols and data symbols are time multiplexed for transmission and in which a variable transmission symbol rate is realized by making a spreading rate variable under a constant chip rate, comprising:

a mixer for converting a received frequency signal into an intermediate frequency signal;

a first local frequency generator supplying the mixer with a local oscillation signal;

an orthogonal demodulator for orthogonally demodulating the intermediate frequency signal in accordance with a second local frequency of a second local frequency generator;

inversely spreading units converting in-phase components and orthogonal components of the baseband signal received from the orthogonal demodulator into analog/digital signals;

pilot symbol demodulators separating the inversely spread signal outputted from the inversely spreading units into pilot symbols and data symbols, and converting the pilot symbols into complex vector expressions by canceling the data modulated components of the pilot symbols;

inversely demodulated pilot symbol in-phase adders for in-phase summing in at least two different manners, the complex vector expressions of the pilot symbols over a predetermined length of the symbol section;

a frequency offset estimator estimating the frequency offset based on conjugate complex multiplication of a plurality of said complex vector expressions which are subject to the in-phase summation; and

a reference local frequency generator generating a reference local frequency based on the frequency offset and delivering the reference local frequency to the first and second local frequency generators.